

### REMARKS

Claims 1 to 8 and 20 to 26 are pending. Claims 1, 20 and 26 are independent.

Favorable reconsideration and further examination are respectfully requested.

Claims 20 to 22 and 24 to 26 stand restricted from the application. Independent claims 20 and 26 have been amended, as shown above, to recite a cover foil in combination with a distribution foil.

Regarding the term "special technical feature", the Office Action states:

Examiner respectfully disagrees. Just because each species include a generic feature does not mean that the special technical features are not different. As set forth within the restriction requirement, the special technical feature includes the specifics as set forth within the restriction requirement (set forth above, not reiterated for brevity's sake), and thus the special technical feature of the species lies in the combination of the generic with the each distinct feature of the distinct species. Examiner would like to emphasize a portion of PCT Rules 13.1 and 13.2 that applicant has quoted in their remarks on p 13 ~ the fact that it is the "technical features...considered as a whole...". Accordingly, it is submitted Applicant's position that there is a generic portion in all of the claims does not consider the structure described by the claims considered as a whole. Furthermore, Applicant still has not provided proof or reasoning as to how the specific, distinct technical features as set forth within the original restriction requirement (and reiterated above, as applicable to the new claims), do not constitute a portion of the special technical feature of each species, as they help define the distinct structures/features of each species. Thus the arguments are not found to be persuasive.

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<sup>1</sup> Office Action, pages 4 and 5

Regarding the last point, we note that the prior art identified in Figs. 1, 2(a) and 2(b) show the structure of a conventional fluid flow plate having channels in a surface thereof. Fig. 1 also shows an MEA adjacent to fluid flow field plates. What the prior art does not show, and what we argue constitutes the common special technical feature of the claims, is the cover foil in combination with the distribution foil. While there may be differences in specifics of the independent claims, the cover foil in combination with the distribution foil constitute a contribution which each of the claims, considered as a whole, make over the art. That there may be some differences in the claim language is not dispositive as to unity, since the claims are being considered *as a whole*, as indicated in the Office Action. Furthermore, if claim features which are not being relied upon for patentability were controlling when it comes to determining unity of invention, this would render the concept of unity of invention virtually meaningless, since virtually all separate independent claims would be found not to have unity of invention.

For at least the foregoing reasons, we submit that claims 1, 20 and 26 have unity of invention under PCT standards, and should be examined in this application, along with their dependent claims, if any.

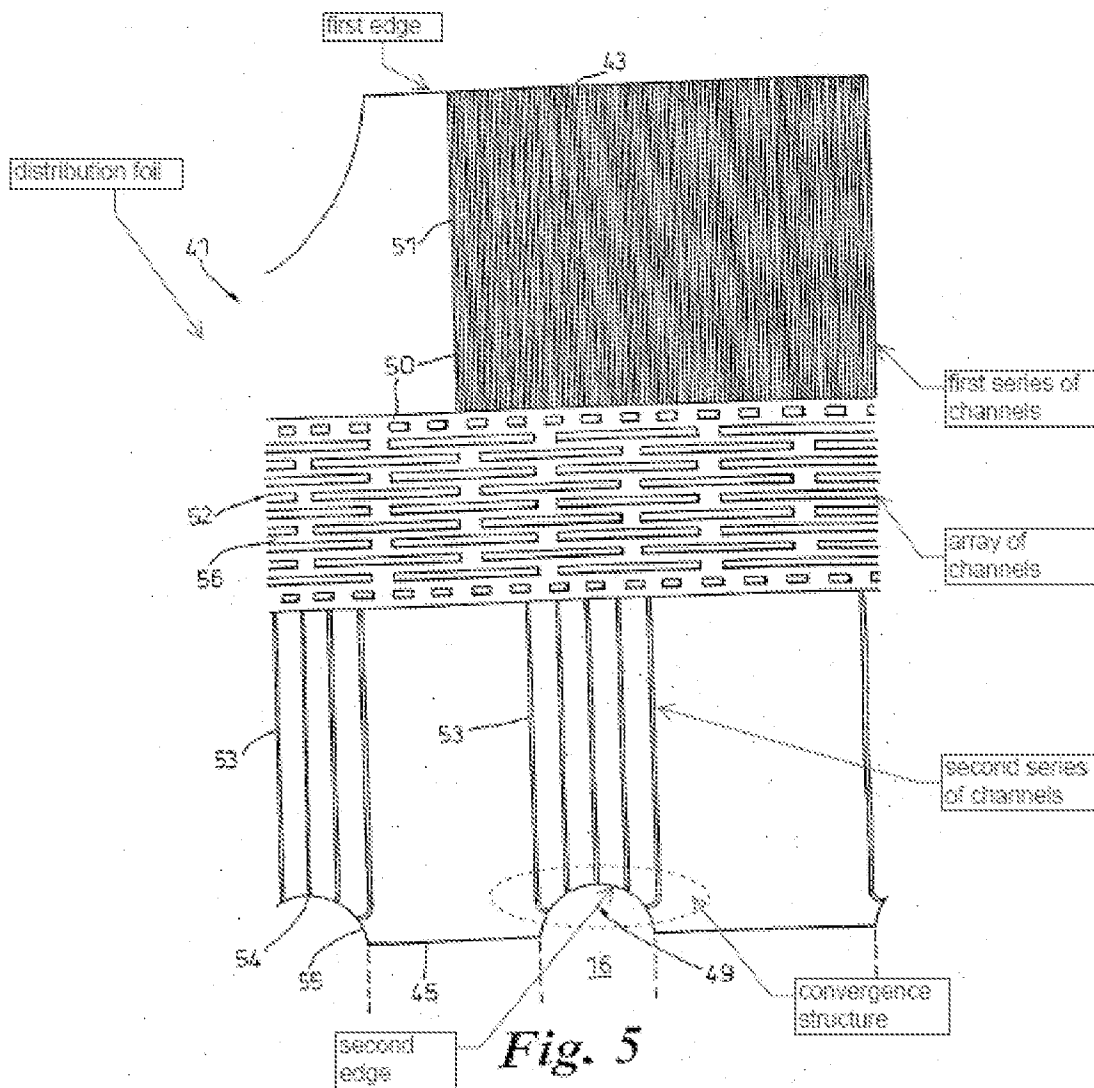
Next, the claims were rejected under §112, first and second paragraphs, for the reasons noted on pages 5 to 7 of the Office Action. Most of these rejections are believed to have been addressed by the amendments made above. However, we address the following rejection with argument:

5. Claims 1-8 and 23 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 recites that the channels (of the distribution foil) terminate "at the second edge at different positions..." However, such a claim language is not supported by the original disclosure. For example, fig. 5 shows channels (second series of channels [53]) in a foil [47]. However, the termination point of each channel is not at distinct places on the second edge [45]. For example the four channels [53] end at the convergence structure [54] (one place on the second edge). Furthermore, such termination (of the channels [53]) is not at the second edge [45]. They are at convergence structures [54] (fig. 5), which are set back from the second edge [45]. Accordingly, such claim language appears to contradict the nature of the invention as originally disclosed. Thus, such claim language is seen to be new matter. Since claims 2-8 and 23 are dependent upon claim 1, it is rejected for the same reason. <sup>2</sup>

In this regard, we note that Fig. 5 is an example of the claimed distribution foil. Support for the features of the distribution foil now found in the claims is shown below in the version of Fig. 5 which we have annotated.

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<sup>2</sup> Office Action, pages 5 and 6



As is clearly seen in Fig. 5, the convergence structure ends at the second edge of the distribution foil. There is no requirement in the claims or elsewhere in the application that the “second edge” be linear. Rather, as we understand it, an edge need not be linear. For example, we look to the following first definition from dictionary.com

*~noun*

1. a line or border at which a surface terminates: *Grass grew along the edges of the road. The paper had deckle edges.* 3

While an edge may be a “line” it also may be “a border” at which a surface terminates. In Fig. 5 above the arcuate edge, labeled the “second edge” constitutes a border at which the distribution foil terminates.

Finally, we note the following definition in the Office Action:

{wherein “convergence” is defined a place of convergence/meeting}. 4

As is well known to those of skill in the art, convergence does not require a meeting. Rather, when read in light of the specification, one of ordinary skill in the art would understand that the convergence structures are adapted structurally so that water from the water injection conduits converges into a channel of a fluid flow field plate.<sup>5</sup>

For at least the foregoing reasons, withdrawal of the §112, first and second paragraph, rejections is respectfully requested.

Turning to the art rejections, all of the elected claims were rejected over U.S. Patent No. 6,066,408 (Vitale) in view of U.S. Patent No. 6,303,245 (Nelson) and U.S. Patent No. 5,998,054 (Jones).<sup>6</sup>

Independent claim 1 is shown below.

1. An assembly for a fuel cell, comprising:  
a fluid flow field plate having a field plate channel in a surface of the fluid flow field plate that extends across the surface in a predetermined pattern;  
a distribution foil having distribution channels in a surface; and

<sup>3</sup> <http://dictionary.reference.com/browse/edge>, retrieved on July 12, 2010

<sup>4</sup> Office Action, page 7

<sup>5</sup> See, e.g., paragraphs 0046 and 0047 of the published version of the application.

<sup>6</sup> Paragraph 7 of the Office Action indicates that the rejection is only for claims 1, 2 and 6 to 8; however, the text that follows indicates that the rejection is for all of the claims.

a cover foil extending over the distribution foil to enclose the distribution foil channels and thereby form water injection conduits between the distribution foil and the cover foil, the water injection conduits each having a corresponding water injection conduit outlet, each water injection conduit output being over the field plate channel to thereby allow water to be injected directly into the field plate channel, wherein water injection conduit outputs of the water injection conduits are configured to inject water at different positions in the field plate channel.

The applied art is not understood to disclose or to suggest at least the underlined portions of claim 1 above and, in particular, the italicized underlined portions above. In this regard, the Office Action states:

Vitale et al. does not specifically teach (a) that the cover (cathode plate [216]) is a foil (the material used for the anode/cathode plates) or (b) that water injection points (plural) exist.

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The Office Action relies on Jones for its alleged disclosure of plural water injection points.

In this regard, the Office Action states:

With respect to (b), Jones et al. teach that each fluid flow plate (bipolar plate) has a plurality of inlets/flow channels [126] and an equal amount of channels for water injection [131] (fig. 2; fig. 3). The motivation for employing such a system (multiple flow channels and a corresponding number of injection ports for water inlet) is that such a system would allow easier mixing and uniform distribution of water over the volume of the fuel cell assembly (col. 3, lines 5-13; 26-34). Therefore it would have been obvious to one having ordinary skill in the art at the time the claimed invention was made to have multiple inlet channels, wherein there is a channel for humidity that corresponds to each (as taught by Jones et al. and applied to Vitale et al.), in order to have a fuel cell system wherein the water introduced to the reactant flow can be more uniformly mixed and distributed through the cell.

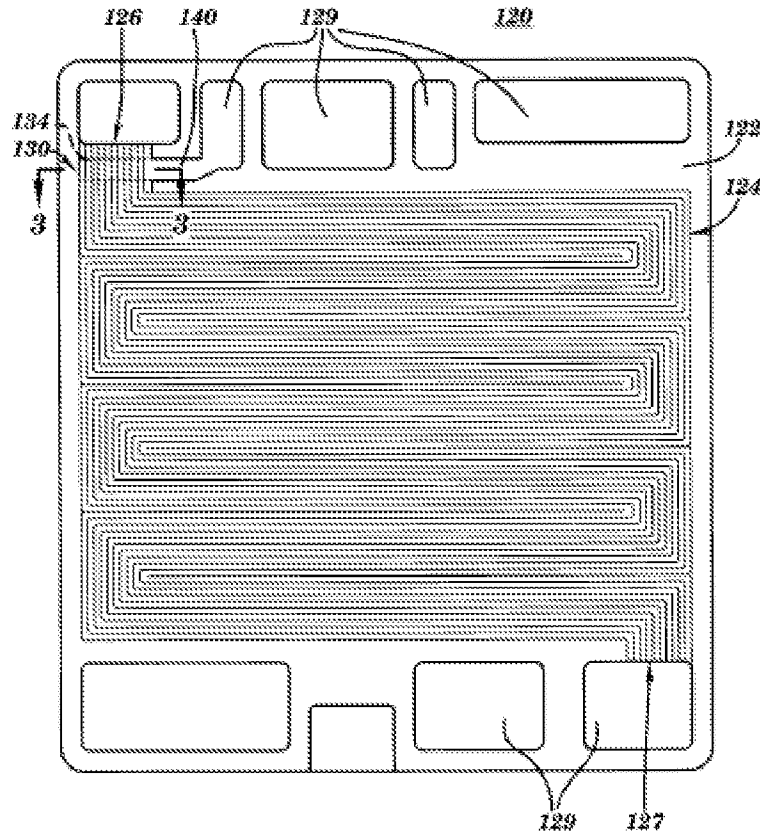
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<sup>7</sup> Office Action, page 10

<sup>8</sup> Office Action, page 11

In this regard, as shown in Fig. 2 of Jones (below), its fluid flow plate 120 includes multiple channels.



**FIG. 2**

As explained in column 5 of Jones:

A bridge or cover plate 128 extends along face 122 and across inlets 126, defining one opening or injection port 131 for each inlet 126 in addition to an input orifice 132. The injection ports provide fluid communication between the inlets and a transverse channel 134 for each fluid flow plate 120. Preferably, the injection ports are of substantially equal size.

<sup>9</sup> Emphasis added

Thus, Jones does not disclose or suggest that water injection conduit outputs of water injection conduits are configured to inject water at different *positions in a field plate channel*. Instead, in Jones, there is but one injection point per channel. As such, in Jones, water is not injected at different positions in a field plate channel. Accordingly, even if Jones were combined with the other applied references, we submit that claim 1 still defines over the resulting hypothetical combination.

Independent claims 20 and 26 are also believed to be patentable over the applied art for at least the same reasons explained above.

Dependent claims are also believed to define patentable features. Each dependent claim partakes of the novelty of its corresponding independent claim and, as such, each has not been discussed specifically herein.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.



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In view of the foregoing amendments and remarks, we respectfully submit that the application is in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

The undersigned attorney can be reached at the address shown below. All telephone calls should be directed to the undersigned at 617-521-7896.

Please apply any fees or credits due in this case to Deposit Account 06-1050 referencing Attorney Docket No. 17638-005US1.

Respectfully submitted,

July 12, 2010  
Date: \_\_\_\_\_

/Paul Pysher/

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